some detail, it is not the intention of the Applicants to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications will readily appear to those skilled in the art. For example, while the analysis herein describes four different methods of detecting the component

5   in the vapor of the food composition, the method is not so limited and may include other analytical techniques, known in the art. The various features of the invention may be used alone or in numerous combinations depending on the needs and preferences of the user. This has been a description of the present invention, along with the exemplary methods of practicing the present

10   invention as currently known. However, the invention itself should only be defined by the appended claims.

What is claimed is:

1.   A method of determining the level of a volatile component in a food

processing stream, the method comprising:

transferring a positively pressurized vapor containing the volatile

component from the headspace of the processing stream into an analyzing

5   station; and

analyzing the positively pressurized vapor to determine the level of the

volatile component in the processing stream.

2.   The method of claim 1 wherein the processing stream is selected from

the group consisting of a fruit product processing stream, a fruit by-product

processing stream, a vegetable product processing stream and a vegetable by-

product processing stream.

3.   The method of claim 1 wherein the volatile component is an essential oil

of at least one of a citrus product and a citrus by-product.

4.   The method of claim 1 wherein the volatile component is a compound of

a class selected from one of an aldehyde, an ester, a ketone and a terpenic

hydrocarbon.

5.   The method of claim 1 wherein the volatile component is selected from

the group consisting of limonene, carvone, octanal, hexanal, citral, linalool,

geraniol, citronellal, pinene, myrcene, terpinene, veral, acetaldehyde,

valeraldehyde, 2-pentanol, furfural, nonanal, decanal, neral, geranial,

5   perillaldehyde, undecanal, dodecanal, ethanol, 1-butanol, 1-penten-3-ol, 3-

methyl-1-butanol, trans-2-hexen 1-ol, 1-heptanol, octanol, terpinen-4-ol, alpha-

terpineol, nerol+citronellol, carveol, dodecanol, ethyl acetate, methyl butirate,

octyl acetate, terpinyl acetate, citronellyl acetate, neryl acetate, geranyl acetate,

ethyl anthranylate, acetone, methyl-vinyl-ketone, ethyl-vinyl-ketone, sabinene,

10 alpha-phellandrene, delta$_3$-carene, beta-cariophyllene, alpha-humulene,

valencene, paradisiol, isomers thereof, and combinations thereof.

6.   The method of claim 1 wherein analyzing the vapor comprises a

technique selected from the group consisting of an infrared spectroscopy,

ultraviolet spectroscopy, photoionization, flame ionization, gas chromatography,

and a combination thereof.

7.   A method of determining the level of a volatile component in a

composition, including at least one of a fruit and a vegetable, the method

comprising:

sparging a sample of the composition in a sparging chamber and thereby

5   generating a positively pressurized vapor containing the volatile component;

transferring the positively pressurized vapor into an analyzing station;

and

analyzing the vapor to determine the level of the volatile component in

the composition.

8.   The method of claim 7 further comprising:

transferring the sample from a processing stream of the composition to

the sparging chamber through an online connection between the processing

stream and the sparging chamber.

9.   The method of claim 7 further comprising:

transferring the sample from a processing stream of the composition

to the sparging chamber through an inline connection between the processing

stream and the sparging chamber.

10.   The method of claim 7 further comprising transferring the sample from a

waste stream of the composition to the sparging chamber.

11.   The method of claim 7 wherein analyzing the vapor comprises a

technique selected from the group consisting of an infrared spectroscopy,

ultraviolet spectroscopy, photoionization, flame ionization, gas chromatography,

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a combination thereof.

12. The method of claim 7 wherein sparging the sample comprises bubbling an inert gas including at least one air, nitrogen, argon, helium, carbon dioxide, through the sample.

13. The method of claim 12 wherein the gas is bubbled at a flow rate in the range from about 10 ml/min to about 1500 ml/min.

14. The method of claim 7 wherein the volatile component is an essential oil of at least one of a citrus product and a citrus by-product of a fruit.

15. The method of claim 9 wherein the volatile component is a degradation product of a vegetable oil.

16. The method of claim 7 wherein the volatile component is a compound of a class chosen from one of an aldehyde, an alcohol, an ester, a ketone, and a terpenic hydrocarbon.

17. The method of claim 7 wherein the volatile component is selected from the group consisting of limonene, carvone, octanal, hexanal, citral, linalool, geraniol, citronellal, pinene, myrcene, terpinene, acetaldehyde, valeraldehyde, 2-pentanol, furfural, nonanal, decanal, neral, geranial, perillaldehyde,
5 undecanal, dodecanal, ethanol, 1-butanol, 1-penten-3-ol, 3-methyl-1-butanol, trans-2-hexen 1-ol, 1-heptanol, octanol, terpinen-4-ol, alpha-terpineol, nerol, citronellol, carveol, dodecanol, ethyl acetate, methyl butirate, octyl acetate,

octyl acetate, terpinyl acetate, citronellyl acetate, neryl acetate, geranyl acetate, ethyl anthranylate, acetone, methyl-vinyl-ketone, ethyl-vinyl-ketone, sabinene,

10   alpha-phellandrene, delta3-carene, beta-cariophyllene, alpha-humulene, valencene, paradisiol, isomers thereof, and combinations thereof.

18.   The method of claim 7 further comprising diluting the sample with a liquid including at least one of water, an aqueous-based solvent, an organic solvent, an inorganic solvent, and a combination thereof, prior to sparging the sample.

19.   A method of determining the level of a volatile oil in a citrus processing

stream, the method comprising:

transferring a sample containing the volatile oil from the processing

stream into a sparging chamber;

5   sparging the sample and thereby generating a positively pressurized

vapor containing the volatile oil;

transferring the positively pressurized vapor into an analyzing station;

and

analyzing the vapor to determine the level of the volatile oil in the

10   processing stream.

20.   The method of claim 19 wherein transferring the sample comprises

transferring the sample from the processing stream to the sparging chamber

through an online connection between the processing stream and the sparging

chamber.

21.   The method of claim 19 wherein transferring the sample comprises

transferring the sample from the processing stream to the sparging chamber

through an inline connection between the processing stream and the sparging

chamber.

22.   The method of claim 19 wherein transferring a sample from the

processing stream comprises transferring a sample from a waste stream.

23.   The method of claim 19 further comprising diluting the sample with a

liquid including at least one of water, an aqueous-based solvent, an organic

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solvent, an inorganic solvent, prior to sparging the sample.

24. The method of claim 19 wherein sparging the sample comprises bubbling an inert gas including at least one of air, nitrogen, argon, helium, carbon dioxide, through the sample.

25. The method of claim 24 wherein the gas is bubbled at a flow rate in the range from about 10 ml/min to about 1500 ml/min.

26. The method of claim 19 wherein analyzing the vapor comprises a technique selected from the group consisting of an infrared spectroscopy, ultraviolet spectroscopy, photoionization, flame ionization, gas chromatography, and a combination thereof.

27. The method of claim 19 wherein the volatile oil is an essential oil of at least one of a citrus product and a citrus by-product of a citrus fruit.

28. The method of claim 19 wherein the volatile oil includes a compound of at least one of a citrus product and a citrus by-product.

29. The method of claim 19 wherein the volatile oil includes a component selected from the group consisting of limonene, carvone, octanal, hexanal, citral, linalool, geraniol, citronellal, pinene, myrcene, terpinene, veral, acetaldehyde, valeraldehyde, 2-pentanol, furfural, nonanal, decanal, neral, geranial, perillaldehyde, undecanal, dodecanal, ethanol, 1-butanol, 1-penten-3-ol, 3-methyl-1-butanol, trans-2-hexen 1-ol, 1-heptanol, octanol, terpinen-4-ol,

alpha-terpineol, nerol, citronellol, carveol, dodecanol, ethyl acetate, methyl butirate, octyl acetate, terpinyl acetate, citronellyl acetate, neryl acetate, geranyl acetate, ethyl anthranylate, acetone, methyl-vinyl-ketone, ethyl-vinyl-ketone,

10 sabinene, alpha-phellandrene, delta$_3$-carene, beta-cariophyllene, alpha-humulene, valencene, paradisiol, isomers thereof, and combinations thereof.

30. The method of claim 19 wherein the citrus processing stream includes at least one of an orange, grapefruit, lemon, lime, tangerine, tangelo, product and by-product.